

# PRENTICE

## *In the Air*



A good view from the cockpit for landing and taxiing is an essential quality of the primary trainer.

### *The Requirements : A Critical Examination of Flying Characteristics*

**N**O aircraft has to give more—or take more—than a primary trainer; for this reason an exceptional degree of versatility is called for, and year by year as the art of flying and applied flying advances, trainer specifications become more difficult to meet. Admirably as it has served, and still is serving, us, the simple, low-powered, sparsely equipped, fair-weather Tiger Moth has now been outgrown. In its place is needed an economical, well - equipped, all - weather monoplane capable of fulfilling all the functions of the Tiger and much more as well. This is a tall order, to meet which the Percival Prentices are being produced. There are other promising designs for "Tiger" replacements, but the Prentice is by far the most ambitious with its three seats, full blind-flying panel, two-stage amber, V.H.F. radio, etc.

By

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taught at each stage, and as a result, more expected of each type of aircraft, must be accepted. It may be that in the near future an increasing use of synthetic trainers, such as the invaluable Link, will help relieve the aircraft situation.

Naval specifications for deck-landing, wing-folding aircraft of the strike and fighter types have been recognized for a long time as among the most difficult to meet. The one-time simple trainer now threatens to rival such Naval types in the problems it sets the designer. The comprehensive wartime specification for the Prentice, which was the outcome

of discussions at all levels of Training Command, and, in particular, recommendations from E.F.S. at Hullavington, represents an important departure from previous practice. From the designer's point of view it was a new example of incompatible design parameters. A very large three-seat cockpit and a mass of equipment were to be hauled round in an unusually sturdy metal airframe with minimum stalling speed, maximum manoeuvrability, all on the 250 h.p. of an unsupercharged Gipsy Queen.

From the flying point of view a large and wide cabin interposed between single airscrew and single-fin tail may be expected to cause some control problems, while the span and area of wing necessitated by weight and stalling considerations can be no help in providing good rolling qualities. Close similarity between the cockpits of primary and advanced trainers in the R.A.F. is a requirement with much in its favour, but it is doubtful whether those who originally laid down that there should be a third seat in the trainers would be so convinced of its value to-day. It seems also that additional power derived from supercharging of the Gipsy Queen engine will be found desirable, if not essential. The construction of the Prentice was

Realizing, like ourselves, the need to train Service pilots at an early stage to fly in almost any weather conditions, by day or night, and with the use of scientific aids, America, too, are producing much more advanced primary trainers. Certainly the elementary of to-day is as advanced as the basic of pre-war years. It would be fatal to forget, however, that advances in aeronautical science have not in any way changed the ability or reactions of an *ab initio* pupil. To him the first instructional flights must be elementary even if they are made in a Meteor T. Mk VII.

To-day a pilot under training works very hard both in the air and on the ground to cover a syllabus occupying some eighteen months from first flight to squadron standard. It is undesirable further to extend the period of training, and, what is more pertinent here, an increase in the number of stages and aircraft types would greatly increase the cost and complicate the work of Training Command in all branches. Thus, the alternative of more